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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,268	11/17/2003	Sriram Gopalaratnam	CISCO-8027	6480

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EXAMINER

SEMENENKO, YURIY

ART UNIT PAPER NUMBER

2841

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/716,268

Applicant(s)

GOPALARATNAM ET AL.

Examiner

Yuriy Semenenko

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 17 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-16 in the reply filed on 08/07/2006 is acknowledged. Claims 17 and 18 have been withdrawn from consideration. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 1-18 are pending in this Application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2.1. Claims 1-2, 4, 10-12 and 15-16 are rejected under 35U.S.C. 103(a) as being unpatentable over Grimm (Patent # 4873764) hereafter Grimm in view of Ohkawa et al.

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(Patent # 6399899) hereafter Ohkawa and in view of Bruck et al. (Patent # 5561271) hereinafter Bruck.

As to claim 1: Grimm discloses a printed circuit board assembly 80, Fig. 7, comprising electronic components 30, 32, 34, Fig. 3 (column 3, lines 27), the electronic components configured to provide a communication infrastructure for transmission of data [intended use] at least some of the electronic components in communication with each other via signal lines 28;

However, Grimm doesn't teach two things:

1. an elevated track, the elevated track supporting the signal lines above the electronic components such that the signal lines can be configured between the electrical components after the electronic components are configured; and
2. a plurality of vertical supports, the vertical supports placed on the surface of the printed circuit board assembly amid the electrical components, wherein the elevated track is supported above the electronic components by the plurality of vertical supports.

Ohkawa teaches in Fig. 1 an elevated track 12, the elevated track supporting the signal lines 14 above the electronic components (magnetic head and read/write board 29, Fig 1 and (column 5, lines 1-15)) such that the signal lines can be configured between the electrical components after the electronic components are configured.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Grimm to include in his invention an elevated track, the elevated track supporting the signal lines above the electronic components such that the signal lines can be configured between the electrical components after the electronic components are configured to provide electrical connection between components.

Bruck discloses in Fig. 3 a plurality of vertical supports 24, 25 and 29.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Grimm to include in his invention a plurality of vertical

supports, the vertical supports placed on the surface of the printed circuit board assembly amid the electrical components, wherein the elevated track is supported above the electronic components by the plurality of vertical supports to provide support and electrical isolation of the cables from the system as taught by Bruck (column 3, lines 33-37)

As to claim 2: Grimm, as modified, discloses the printed circuit board assembly having all of the claimed features as discussed above with respect claim 1, wherein the signal lines Fig. 3 (column 3, lines 27-30) comprise communication lines 28, 36, Fig. 3.

As to claim 4: Grimm, as modified, discloses the printed circuit board assembly having all of the claimed features as discussed above with respect claim 1,

except, Grimm doesn't teach the signal lines connect the printed circuit assembly board to an external device.

Ohkawa teaches in Fig. 1 the signal lines 14 connect the printed circuit assembly board 11 to an external device 29 (column 9, lines (47-50).

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Grimm to include in his invention the signal lines connect the printed circuit assembly board to an external device to transmit data to read/write board, as taught by Ohkawa (column 9, lines 47-50).

As to claim 11: Grimm, as modified, discloses the printed circuit board assembly having all of the claimed features as discussed above with respect claim 1,

except, Grimm doesn't teach the track is constructed from metal.

Ohkawa teaches the track is constructed from metal.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Grimm to include in his invention the track is constructed from metal to provide strong support for lines.

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As to claims 10, 12, and 15: Grimm, as modified, discloses the printed circuit board assembly having all of the claimed features as discussed above with respect claim 1, wherein the layer 38, Fig. 5a and holes 46 are constructed from plastic and has a coating and such layers and holes are sufficiently flexible to allow reshaping of the track (column 4, lines 7-27).

As to claim 16: Grimm, as modified, discloses the printed circuit board assembly having all of the claimed features as discussed above with respect claim 1, except, Grimm doesn't teach the track is attached by screws to the vertical supports.

Bruck discloses in Fig. 3 and 4 the cable is attached to the vertical supports 24, 25, 29 by clamps 43 and 44 and by screw cover 49.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Grimm to include in his invention the track is attached by screws to the vertical supports for easy to assemble the track.

2.2. Claims 8-9 are rejected under 35U.S.C. 103(a) as being unpatentable over Grimm in view of Ohkawa and in view of Bruck and in view of Sheigerschmidt (Patent #2003/0019657) hereinafter Sheigerschmidt.

As to claims 8 and 9: Grimm, as modified, discloses the printed circuit board assembly having all of the claimed features as discussed above with respect claim 1, except, Grimm doesn't teach the track is constructed from STATEX.

Sheigerschmidt teaches conductor shield 220, Fig.3a is constructed from STATEX.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Grimm to include in his invention the track is constructed from STATEX to protect video and audio signals, as taught by Sheigerschmidt (page 1, 2, [0016]).

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2.3. Claim 7 is rejected under 35U.S.C. 103(a) as being unpatentable over Grimm in view of Ohkawa and in view of Bruck and in view of Colver et al. (Patent # 6392901) hereinafter Colver.

As to claim 7: Grimm, as modified, discloses the printed circuit board assembly having all of the claimed features as discussed above with respect claim 1,

except, Grimm doesn't teach the track is constructed from Formex.

Colver teaches housing bottom 148, Fig. 7 is constructed from Formex.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Grimm to include in his invention the track is constructed from Formex to enhance the slideability, as taught by Colver (column 11, lines 52-58).

2.4. Claim 13 is rejected under 35U.S.C. 103(a) as being unpatentable over Grimm in view of Ohkawa and in view of Bruck and in view of Akram (Patent #6392901) hereinafter Akram.

As to claim 13: Grimm, as modified, discloses the printed circuit board assembly having all of the claimed features as discussed above with respect claim 1,

except, Grimm doesn't teach the track is constructed from glass.

Akram teaches fence member 90 Fig. 7 is constructed from plastic or glass.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Grimm to include in his invention the track is constructed from glass to protect signal lines from damage.

2.5. Claim 3 is rejected under 35U.S.C. 103(a) as being unpatentable over Grimm in view of Ohkawa and in view of Bruck and in view of Cullinan et al. (Patent # 5719748) hereinafter Cullinan.

As to claim 3: Grimm, as modified, discloses the printed circuit board assembly having all of the claimed features as discussed above with respect claim 1,

except, Grimm doesn't teach the signal lines comprise power lines.

Cullinan teaches in Fig. 1 and 2 the signal lines comprise power lines 10.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Grimm to include in his invention the signal lines comprise power lines to provide power supply for the chip, as taught by Cullnan (column 1, lines 39-44).

2.6. Claims 5 and 6 are rejected under 35U.S.C. 103(a) as being unpatentable over Grimm in view of Ohkawa and in view of Bruck and in view of Handforth et al. (Patent # 6061241) hereinafter Handforth.

As to claims 5 and 6: Grimm, as modified, discloses the printed circuit board assembly having all of the claimed features as discussed above with respect claim 1, except, Grimm doesn't teach the track is constructed from fiberglass, comprises FR4 fiberglass.

Handforth discloses in the "Background of the invention" section, at the time the invention was made, it was well know to use the substrate 12, Fig. 1 is constructed from fiberglass, comprises FR4 fiberglass (column 4, lines 17-20).

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Grimm to include in his invention the track is constructed from fiberglass, comprises FR4 fiberglass to provide track's substrate with good electro- insulators parameters.

2.7. Claim 14 is rejected under 35U.S.C. 103(a) as being unpatentable over Grimm in view of Ohkawa and in view of Bruck and in view of Feigenbaum et al. (PGPub # 2003/0107874) hereinafter Feigenbaum.

As to claim 14: Grimm, as modified, discloses the printed circuit board assembly having all of the claimed features as discussed above with respect claim 1, except, Grimm doesn't teach the track is constructed from rubber.

Feigenbaum discloses in Fig. 2 the electrometric strip 29 is constructed from silicon rubber (page 2, [0027]).


Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Grimm to include in his invention the track is constructed from rubber to provide material for track with good elastic property.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuriy Semenenko whose telephone number is (571) 272-6106. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on (571)- 272-2800 ext. 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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